

STUDIES IN THE EUPATORIEAE (ASTERACEAE). CXCI.

VARIOUS NEW SPECIES FROM BRASIL.

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It is necessary to name a number of new species of Eupatorieae from Brasil belonging to the genera *Campuloclinium*, *Dasycondylus*, *Disynaphia*, *Koanophyllon*, *Lasiolaena* and *Stevia*.

CAMPULOCLINIUM EITENIORUM R. M. King & H. Robinson, sp. nov.

Plantae herbaceae annuae? erectae ad 2 m altae inferne in axillis tenuiter ramosae. Caules flavescentes vel fuscescentes teretes distincte striati dense laxe hirsuti et glandulo-punctati. Folia opposita breviter petiolata, petiolis 2-5 mm longis; laminae oblong-ovatae plerumque 3-7 cm longae et 1.5-4.0 cm latae base breviter cuneatae vel truncatae breviter acuminatae margine multo crenato-serratae apice obtusae vel breviter acutae supra sparse pilosae subtus plerumque in nervis et nervulis pilosae utrinque dense glandulo-punctatae fere ad basem trinervatae. Inflorescentiae terminales late corymboso-paniculatae, ramis primariis suboppositis dense pilosis et glandulo-punctatis, ramis ultimis plerumque 5-15 mm longis. Capitula anguste campanulata ca. 10 mm alta et 5-6 mm lata; squamae involucri ca. 17 leniter inaequales obovatae vel anguste oblongae plerumque 6-8 mm longae et 1.0-2.5 mm latae 4-6-costatae fere ad basem exaratae apice obtusae vel breviter acutae margine superne in bracteis interioribus minute laciniatae extus dense breviter pilosae et glandulo-punctatae. Flores ca. 30 in capitulo; corollae albae 3.5-4.0 mm longae extus glanduliferae, tubis distinctis 1.5-1.7 mm longis, faucibus campanulatis ca. 1.5 mm longis, lobis aequilateraliter triangularibus ca. 0.7 mm longis extus densius glanduliferis non setiferis; thecae antherarum infuscae ca. 1.3 mm longae; appendices antherarum truncatae vel leniter retusae latiores quam longiores ca. 0.2 mm longae et 0.25 mm latae; basi stylorum noduliferi puberuli. Achaenia ca. 5 mm longa inferne attenuata laterale sparse glandulifera plerumque in costis setifera, costis albis; setae pappi ca. 30 plerumque 3.0-3.5 mm longae. Grana pollinis in diametro ca. 25 μ m spinulifera.

TYPE: BRASIL: Sao Paulo: Municipio de Moji-Guaçu: "Campos das Sete Lagôas" Fazenda Campininha just north of Rio Moji-Guaçu. About 10 km north of river & village of Padua Sales. 22° 15'S, 47° 8'W. (About 30 km NW of city of Moji-Mirim). Alt. 625 m. Habitat: dense campo cerrado. Small scrubby trees with crowns touching to separated by a distance of 1-3 crown diameters. Dappled shade and scattered small openings of a few square meters. Many shrubs, ground cover of grasses and herbs. Soil poor,

reddish-brown fine sand with a little clay. Erect single stem, 2 m tall. Fl. white. 14 April 1961. *George Eiten & Liene T. Eiten 2592* (Holotype, UB; isotype, US).

The new species is closely related to *C. hirsutum* Gardn., found to the north in Goias and Minas Geraes. The new species is initially distinguishable by the more distinctly petiolate, more pointed, non-arched or conduplicate leaves. The stems and leaves are less hirsute, the pedicels are longer and narrower, and the heads are more narrowly campanulate. The corolla is particularly distinctive in the long narrow basal tube, and the lobes have no hairs, only numerous glands.

DASYCONDYLUS SANTOSII R. M. King & H. Robinson, sp. nov.

Plantae suffrutescentes mediocriter ramosae ca. 1 m altae? Caules teretes distincte striati hirsuti, pilis rufescentibus. Folia opposita, petiolis 5-9 mm longis; laminae ovatae plerumque 5.0-8.5 cm longae et 2.5-4.0 cm latae base obtusae et breviter acuminatae margine valde crenato-serratae apice argute acutae vix acuminatae supra longe pilosae subtus dense pilosae vel subtomentosae fere ad basem distincte trinervatae. Inflorescentiae terminales laxae corymbosae vel subcymosae, ramis tenuibus hirsutis, ramis ultimis 0-5 mm longis. Capitula campanulata ca. 9 mm alta et 6-7 mm lata; squamae involucri ca. 18 obovatae vel lineares 6-8 mm longae et 1-2 mm latae inferne bicostatae apice acutae vel breviter acuminatae extus dense pilosae. Flores ca. 20 in capitulo; corollae albae anguste infundibulares ca. 6 mm longae inferne glabrae superne sensim glandulo-punctatae, tubis ca. 3 mm longis indistinctis, lobis 0.8-0.9 mm longis et 0.5-0.6 mm latis margine superne extus distincte papilloso; filamenta in parte superiore ca. 0.4 mm longa; thecae antherarum infuscatae ca. 1 mm longae; appendices antherarum oblongo-ovatae ca. 0.35 mm longae et 0.23 mm latae. Achaenia ca. 2.5 mm longa superne sparse setifera; setae pappi ca. 40 plerumque 5.0-5.5 mm longae. Grana pollinis in diametro ca. 25 μ m minute spinuliferae.

TYPE: BRASIL: Bahia: Acaraí estrada ao lado S. Planta ramosa, fl. branca envoloco verde. Capoeira. 1.7.71. *T.S. dos Santos 1713* (Holotype, CEPEC; isotype, US).

In the key to *Dasycondylus* provided by King and Robinson (1972), *D. santosii* would run generally to couplet 5 containing *D. regnellii* K. & R. and *D. riedelii* K. & R. because of the cuneate leaf bases, the ca. 20 flowers per head, and the narrow corolla lobes. The new species is easily distinguished, however, by the hirsute stems. Additional differences include the lack of setae on the corolla lobes, the densely pilose but not tomentose pubescence on the leaf undersurface, the strongly crenate-serrate margins of the leaves, and the acute to acuminate tips of the involucrel bracts.

DISYNAPHIA MINUTIFLORA R. M. King & H. Robinson, sp. nov.

Plantae herbaceae vel suffrutescentes ca. 50 cm altae multo

ramosae. Caules rufo-brunnescentes teretes vel irregulariter corrugati sparse puberuli et glandulo-punctati. Folia laxe spiraliter inserta sessilia perangustata subteretia plerumque ca. 1 cm longa subcarnosa multo glandulo-punctata, fasciculis axillaribus parvis indistinctis. Inflorescentiae terminales laxe corymboso-paniculatae, ramis purpurascences dense puberulis et sparse glandulo-punctatis, ramis ultimis plerumque 0-2 mm longis, capitulis in glomerulis parvis numerosis aggregatis. Capitula submatura ca. 3 mm alta et 2 mm lata; squamae involucri herbaceae plerumque virides apice purpureotinctae 10-12 subimbricatae ca. 3-seriatae anguste oblongae 1.0-2.5 mm longae et 0.5-1.0 mm latae apice rotundatae et dense pilosulo-fimbriatae extus multo glandulo-punctatae et sparse puberulae. Flores 5 in capitulo. Corollae albae? submaturae ca. 2 mm longae subcylindraceae in tubis brevibus leniter angustiores inferne extus glabrae, lobis oblongis ca. 1 mm longis et 0.45 mm latis extus glandulo-punctatis apice papillosis; filamenta in partibus superioribus 0.25 mm longa, cellulis dense annulate ornatis; thecae lavandulae ca. 1 mm longae base acutae; appendices breviter oblongae ad 0.15 mm longae et ca. 0.18 mm latae; basi stylorum glabri; appendices stylorum alte dense papillosae. Achaenia immatura ca. 1 mm longa plerumque glabra subapice dense breviter setifera et glandulo-punctata; setae pappi ca. 20 inaequilongae ad 1.2 mm longae irregulariter scabrae vel barbellatae inferne latiores, cellulis apicalibus acutis. Grana pollinis in diametro 20-22 μ m breviter spinulifera.

TYPE: BRASIL: Minas Gerais: Serra do Espinhaço: Serra do Itabirito, ca. 45 km S.E. of Belo Horizonte, ca. 1500 m elev. Grazed campo and cerrado, upland valley. Herb or subshrub ca. 50 cm tall. Heads white. 8 Feb. 1968. *H.S. Irwin, H. Maxwell & D. Wasshausen 19573* (Holotype, UB; isotype, US).

The new species seems to have the smallest heads and the most lax inflorescences of any member of the genus even taking into account the somewhat immature status of the type specimen. The leaves also seem less densely inserted and more glabrous than in most other members of the genus.

KOANOPHYLLON ANDERSONII R. M. King & H. Robinson, sp. nov.

Plantae herbaceae ca. 1 m altae erectae pauca ramosae. Caules flavo-virides teretes striati dense pilosuli. Folia opposita, petiolis 5-16 mm longis; laminae ovatae 4-8 cm longae et 1.5-4.5 cm latae base late rotundatae trinervatae margine in partibus latioribus irregulariter serratae superne serrulatae apice distincte acuminatae supra pilosulae et sparse glandulo-punctatae subtus dense glandulo-punctatae plerumque in nervis et nervulis dense pilosulae. Inflorescentiae late laxe corymboso-paniculatae vel leniter cymosae, ramis ultimis 7-27 mm longis dense puberulis. Capitula ca. 5 mm alta et ad 10 mm lata; squamae involucri a. 16 lineares ca. 4 mm longae et 0.5 mm latae apice anguste attenuatae extus dense puberulae et sparse glandulo-

punctatae. Flores 50-75 in capitulo; corollae albae ca. 3 mm longae, tubis ca. 1 mm longis, faucibus ca. 1.4 mm longis, tubis et faucibus extus pauca glanduliferis, lobis late triangularibus ca. 0.6 mm longis et 0.4 mm latis extus dense glandulo-punctatis; filamenta in parte superiore ca. 0.23 mm longa; thecae ca. 1 mm longae; appendices antherarum ca. 0.15 mm longae et 0.17 mm latae late rotundatae; nectaria ca. 0.35 mm alta. Achaenia 2.0-2.5 mm longa dense breviter setifera; setae pappi ca. 25 ca. 2 mm longae apice non vel vix latiores. Grana pollinis in diametro 20-22 μ m.

TYPE: BRASIL: Goias: Chapada dos Veadeiros. 1 km E of Alto Paraíso on road to Nova Roma; elev. ca. 1300 m; region of mesophytic forest along stream and on hill above, changing to cerrado on higher, drier slopes. Herb 1 m tall; flowers white; in forest. 5 March 1973. *W.R. Anderson, M.T. Kalin Arroyo, S.R. Hill, R. Reis dos Santos & R. Souza 6344* (Holotype, UB).

The new species has a general habit and form of inflorescence most like *K. consanguineum* among the Brazilian species. The latter species from areas near Rio de Janeiro differs by its more finely and evenly pubescent stems and leaves, by the longer petioles and acute to scarcely acuminate shallowly crenate-serrate leaf blades, and by the sparser more glandular pubescence of the achenes.

LASIOILAENA PEREIRAE R. M. King & H. Robinson, sp. nov.

Plantae fruticosa 0.5-1.0 m altae? Caules teretes striati dense puberuli vel tomentelli. Folia spiralter inserta sessilia; laminae anguste obovatae vel oblanceolatae plerumque 1.7 cm longae et 0.5 cm latae inferne anguste oblongae et base abrupte leniter constrictae margine superne saepe pauca subserrulatae apice breviter acutae supra glabrae subtus in nervis et nervulis prominentiter vel subprominentiter dense reticulatis dense puberulae inter nervulas dense glandulo-punctatae, nervis secundariis paucis valde ascendentibus. Inflorescentiae in ramis terminales dense corymbosae inferne in ramis brevibus foliosae, ramis ultimis ca. 5 mm longis dense puberulis vel tomentellis. Capitula in ramis solitaria late campanulata ca. 7 mm alta et 7-10 mm lata; squamae involucri ca. 15 leniter subimbricatae ca. 2-seriatae lanceolatae vel linear-lanceolatae 4.0-5.5 mm longae 0.7-1.0 mm latae superne saepe pallide virescentes apice acutae non vel vix acuminatae extus dense puberulae et sparse luteo-glandulo-punctatae; receptacula distincte conica puberula. Flores ca. 20 in capitulo; corollae lavandulae vel violaceae ca. 4 mm longae extus sparse vel in lobis densius luteo-glandulo-punctatae, tubis ca. 1.3 mm longis, faucibus ca. 2 mm longis, lobis ca. 0.6 mm longis et latis; thecae antherarum ca. 1.4 mm longae; appendices antherarum late oblongae ca. 0.26 mm longae et 0.24 mm latae margine integrae. Achaenia ca. 2 mm longa sparse minute glandulifera plerumque in costis multo ascendentiter setifera; setae pappi ca. 35 plerumque 2.5-3.5 mm longae, cellulosis apicalibus argute acutis non deformibus. Grana pollinis in

diametro ca. 22 μm .

TYPE: BRASIL: Bahia: Entre Palmeiras e Lençóis. 900 m alt. fl. violaceas. 14-9-1956. *Edmundo Pereira 2081* (Holotype, RB).

The type specimen of the new species has been determined previously as *Stylotrichum corymbosum* (DC.) Mattf. which it resembles in habit, the colored glands, and in the initial aspect of the pubescence. The species can readily be rejected from *Stylotrichum*, however, on the basis of the well-developed basally winged pappus setae, the conical and puberulous receptacle, the lack of hieracioid hairs, the violet corollas, and the glabrous shaft of the style. All cited characters agree with a placement of the species in the genus *Lasiolaena*. Among the four species recognized in the recent revision of *Lasiolaena* (King & Robinson, 1979) *L. santosii* K. & R. seems closest, also having narrow more pointed leaves, entire margins on the anther appendages, and thinner pubescence on the leaves. The new species is distinct by the lack of petioles on the leaves, the puberulous rather than flaccidly tomentellous undersurfaces of the leaves, the restriction of glandular punctations to areas between the veins, and the few slight serrulations near the leaf tips.

STEVIA MORII R. M. King & H. Robinson, sp. nov.

Plantae herbaceae ad 1 m altae erectae pauce ramosae. Caules brunnescentes teretes leniter striati pilosi et minute puberuli. Folia opposita, petiolis ad 15 mm longis; laminae ovatae plerumque 1.5-4.0 cm longae et 0.8-2.7 cm latae base anguste cuneatae vel acuminatae margine utrinque 4-8-crenato-serrulatae vel duplo-crenatae apice obtusae vel breviter acutae supra pilosae subtus pallidiores parum carnosae distincte immerse glandulo-punctatae plerumque in nervis et nervulis pilosae fere ad basem distincte trinervatae. Inflorescentiae laxae cymosae in ramis secundariis ca. 45° divaricatae, pedicellis plerumque 10-18 mm longis glandulis stipitatis dense obsitis. Capitula anguste cylindrica 10-12 mm alta et 2-3 mm lata; squamae involucri 5 omnino herbaceae 6-7 mm longae ad 1.5 mm latae apice breviter acutae extus glandulis stipitatis dense obsitae. Flores 5 in capitulo; corollae plerumque lavandulae in lobis pallidae ca. 8 mm longae extus omnino puberulae et glanduliferae, tubis ca. 1 mm longis, faucibus ca. 4.5 mm longis anguste infundibularibus superne intus dense puberulis, lobis aequalibus vel subaequalibus oblongis 2.0-2.5 mm longis ca. 0.8-1.0 mm latis; filamenta in parte superiore ca. 0.25 mm longa; thecae ca. 2 mm longae; appendices antherarum oblongo-ellipticae ca. 0.6 mm longae et 0.2 mm latae margine distincte crenulatae apice irregulariter lobatae; basi stylorum leniter nodiformes glabri. Achaenia anguste prismatica ca. 4 mm longa dense scabrida sparse minute glandulifera; aristae pappi adelphocarporum ca. 10 plerumque 5-6 mm longae rubrae ad basem vix alatae, aristae pappi idiocarporum 1, squamae pappi idiocarporum ca. 9 ca. 0.3-1.0 mm longae. Grana pollinis in diametro ca. 25 μm (Type I).

TYPE: BRASIL: Bahia: Municipio de Rio de Contas, a 10 km ao NW de Rio de Contas. Elev. ca. 1000 m. Common herbs one meter tall, flowers lavender. July 21, 1979. R.M.King, Scott A.Mori, T.S. dos Santos & J.L.Hage 8075 (Holotype, CEPEC; isotype, US).

Recent efforts to identify specimens have indicated that many undescribed species of *Stevia* occur in Brasil. The present new species is particularly distinct, having a habit like that of *S. heptachaeta* DC. of the Goias region, but lacking the uniformly 7-8-aristate achenes of that species.

MORITHAMNUS GANOPHYLLUS (Mattfeld) R. M. King & H. Robinson, comb. nov. *Eupatorium ganophyllum* Mattfeld ex Pilger, Notizblatt botanischen Gart. Mus. Berlin 9: 379. 1925.

At the time of establishment, the genus *Morithamnus* (King, Robinson and Barroso, 1979) was monotypic, containing only *M. crassus* K.R. & B., which has spirally inserted leaves. The present species was then known only from description and type photographs which clearly indicated its opposite-leaved nature. Since then, type material of the Mattfeld species has been received on loan through the kindness of the Botanische Staatssammlung in München. Details of the species, especially the paired resin ducts in the leaves and in the throats of the corollas, the oblanceolate, fleshy, viscid leaves, the smooth inner surfaces of the corolla lobes, the more regular toothing of the pappus bristles, and the setae on the upper part of the achene ribs, all emphasize the relationship to *Morithamnus crassus*. The two species differ in pappus size, but such variation seems common in Gyptoid genera, and structural details are the same. The leaf insertion remains the most significant difference, but in view of other indications of close relationship, we do not wish to elevate this to an a priori generic character. The common characters of the two species of *Morithamnus* help to reinforce the isolation of that genus from the closely related *Bahianthus*.

Literature Cited

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Campuloclinium eiteniorum R.M.King & H.Robinson, Holotype, Herbário Universidade de Brasília. Photos by Victor E. Krantz, Staff Photographer, National Museum of Natural History.



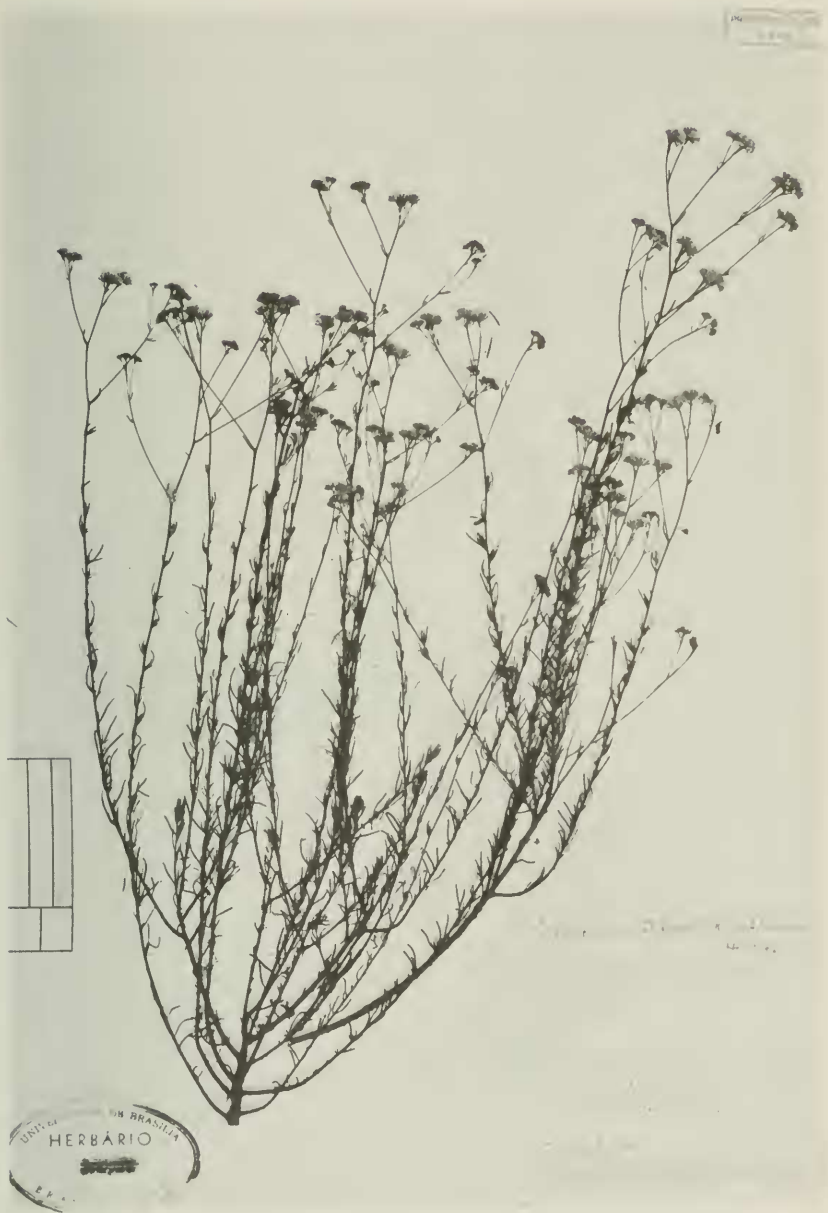
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NATIONAL HERBARIUM

Dasycondylus santosii R.M.King & H.Robinson, Isotype, United States National Herbarium.



Disynaphia minutiflora R.M.King & H.Robinson, Holotype,
Herbário Universidade de Brasília.



Koanophyllon andersonii

Koanophyllon andersonii R.M.King & H.Robinson, Holotype, Herbário Universidade de Brasília.



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Lasiolaena pereirae R.M.King & H.Robinson, Holotype, Jardim Botânico, Rio de Janeiro.



Stevia morii R.M.King & H.Robinson, Isotype, United States National Herbarium.



Enlargements of heads. Top left: *Campuloclinium eiteniorum*. Top right: *Dasycondylus santosii*. Middle left: *Disynaphia minutiflora*. Middle right: *Koanophyllon andersonii*. Bottom left: *Lasiolaena pereirae*. Bottom right: *Stevia morii*.